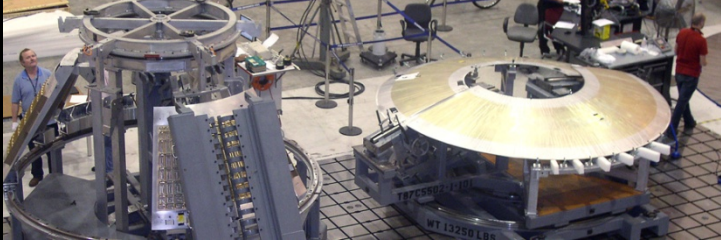


ORION

CREW EXPLORATION VEHICLE

WEEKLY ACCOMPLISHMENTS



09.04.09

The Orion Project Preliminary Design Review (PDR) Board successfully concluded August 31 (Photo right) and established the basis for proceeding to the critical design phase of Orion.

Participants identified technical and management challenges and agreed on plans to reduce potential risks as the project moves forward. The PDR began with subsystem level reviews starting in February and proceeded to the integrated system review process with a

seven-day-long System and Module Review in July. The PDR included reviewers from across the agency. The PDR process formally proceeds to the agency independent Non Advocate Review that will conclude with a final report to agency management.




The Launch Abort System (LAS) Pathfinder (Photo below) was relocated to the launch pad at White Sands Missile Range in preparation for the upcoming stacking operation. The Pathfinder Crew Module, Separation Ring and LAS Pathfinder will be stacked onto the PA-1 launch stand. Shown right is the pad stack verification underway with the Crew Module pathfinder and Crew Module/Service Module Integration Fixture mate.




The Vehicle Performance Analysis team performed fit checks of the Crew Optical Alignment Sight (COAS) in the Orion Mockup at Johnson Space Center. The team is looking at the possibility of adapting a COAS navigation aid into the Orion vehicle to support a request by the Crew Office. The COAS will aid astronauts in rendezvous, docking, and navigation.



 **The Landing and Descent Deceleration Earth Recovery System Soil Model Assessment swing test of the half scale boilerplate at the Langley Dynamic Impact Research (LandIR) completed two tests (Photos left and below).** The sand bed at Langley Research Center was prepped and tested to verify that it behaves like the sand at Kennedy Space Center.

Both impacts of the half scale test article occurred at 25 feet per second (fps) vertical velocity and 30 fps horizontal velocity, 28 degrees pitch. The three remaining tests at 25 fps vertical, 40 fps horizontal and 35 fps vertical velocity at both 40 and 50 fps horizontal velocity will be completed in September. These tests show how the Crew Module will react in the event of a contingency land landing.

 **The Crew Exploration Vehicle Parachute Assembly System (CPAS) Pad Abort-1 (PA-1) confidence level vibration testing of the confluence fitting and the confluence tray was successfully completed.** PA-1 confidence tests remaining are the shock testing, 7 and 40 ft drop test, auto ignition testing of mortars which is tentatively planned for completion by the end of September. The firing of the mortars following the shock testing is planned for October.

